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Report to STAKEHOLDERS

<http://www.edwards.af.mil/penvmng/index.html>

INSIDE

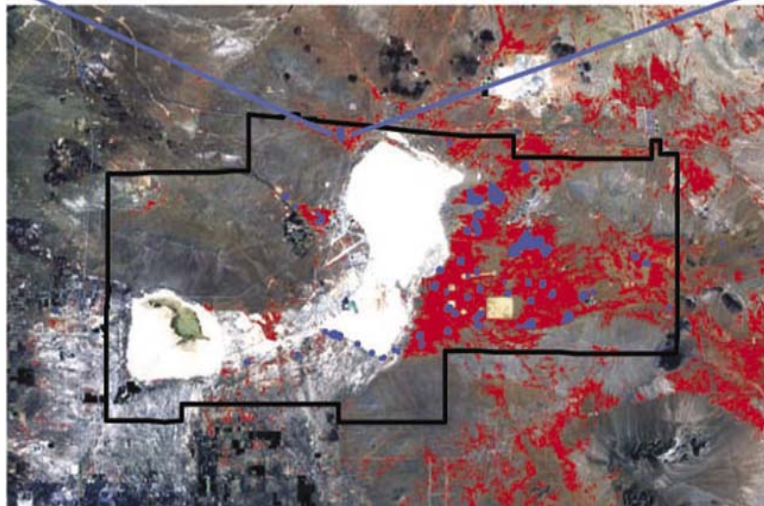
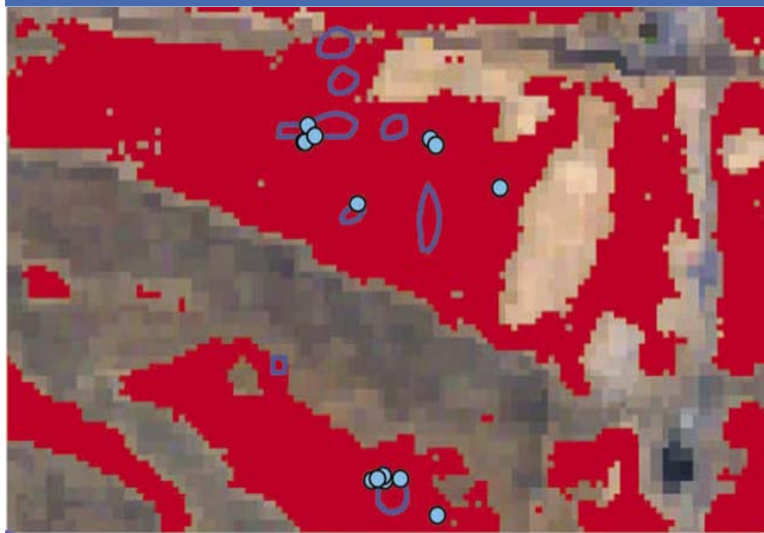
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The Hazardous Waste Support Facility held a household hazardous waste roundup day for those living on base. Details and photos inside.

4

Do you know where your recycled aluminum cans go?



ON TARGET

Left, are two views of predictive modeling for the desert cymopterus. The red areas show the soil types that can provide habitat for the desert cymopterus, while the blue outline signifies where actual populations were in 2003. The light blue circles are new plants discovered this year using this method.

Top, on base this is not as rare.

Predictive model helps keep rare plant off endangered list

The findings of new populations of desert cymopterus have been crucial in the decision of the U.S. Fish and Wildlife Service that the desert cymopterus not be listed as endangered.

With predictive modeling, Environmental Management (EM) has successfully identified

new populations of the native plant species growing on and around Edwards Air Force Base (AFB).

"Mapping a species with predictive modeling saves time and money in terms of surveying land," said Stephen Watts, government program

See *Modeling* page 6



If you have a question about the Edwards Air Force Base Environmental Management program, you may address it to Stakeholders Forum, Attn: Gary Hatch or Miriam Harmon, 5 E. Popson Ave., Edwards AFB, CA 93524-8060, or send e-mail to: afftc.em.com.rel@edwards.af.mil

Next RAB Meeting

August 25, 2005

5:30 p.m.

California City

California City

Middle School

9736 Redwood Boulevard

The public is invited.

Q.

What is the difference between light nonaqueous phase liquids (LNAPLs), dense nonaqueous phase liquids (DNAPLs), and miscible contaminants at Edwards Air Force Base (AFB)?

A.

Light nonaqueous phase liquids are liquids that are sparingly soluble in water and less dense than water. For example, oil is an LNAPL because it floats on top of the water and does not mix with the water. Hydrocarbons, such as oil and gasoline, are examples of LNAPLs.

Dense nonaqueous phase liquids are denser liquids than water and do not dissolve or mix easily when in contact with water, making it immiscible — does not mix well with water. In the presence of water it forms a separate phase from the water.

At Edwards AFB, jet fuels are LNAPLs, solvents are DNAPLs and alcohols are miscible — mixes with water.

“Many solvents, jet fuels and oils were spilled back around World War II at Edwards AFB,” Environmental Restoration Program (ERP) manager, Rebecca Hobbs said. “These contaminants fall into one of three contaminant types: LNAPL, DNAPL, and miscible.”

Hobbs has given hands on presentations to a variety of people about such contaminants. In the May 2003 *Report to Stakeholders* an article was written defining in clearer detail the presentation Hobbs made to students about LNAPL and DNAPL.

When cleaning up contaminated sites, base ERP engineers will first determine whether or not it is an LNAPL, DNAPL or miscible site. This way, the engineers can look into types of technologies they can use to clean the area up.

Report to Stakeholders is a publication of the Edwards AFB Environmental Management Division. Its purpose is to inform and educate the public, base workers and residents about continuing Environmental Management efforts at Edwards AFB. It currently has a circulation of 6,000, including about 2,000 subscribers.

Contents of the *Report to Stakeholders* are not necessarily the official view of, or endorsed by, the U.S. government, the Department of Defense, or the Department of the Air Force.

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**Report to
STAKEHOLDERS**



Commander 95th Air Base Wing..... Col. Drew D. Jeter
Base Civil Engineer..... James Judkins
Division Chief Environmental Management..... Robert Wood
Branch Chief Environmental Restoration..... David Steckel
Branch Chief Environmental Conservation..... Gerald Callahan
Branch Chief Environmental Quality..... Robert Shirley





Household Hazardous Waste Roundup Day

Round up Day nets more than a ton of hazardous wastes

In conjunction with Earth Day, the Edwards Air Force Base (AFB) Hazardous Waste Support Facility (HWSF) held a Household Hazardous Waste Round up Day April 23.

Every year, the HWSF targets the base housing facilities, encouraging those living there to roundup their household hazardous waste and bring it to the event — which was held at the base exchange parking lot this year.

“It is a successful event because it is convenient,” HWSF manager, Dennis Young said. “Doing this every year not only allows those living on base to bring in their hazardous waste, but it also is an educational tool. Many people do not know where to bring their hazardous waste and recyclables, so, we get a chance for some one-on-one training.”

The HWSF will take all hazardous materials in its original packaging. This includes cleaners, detergents, laundry products, pesticides, herbicides, automotive oils, filters, antifreeze, aerosols, pool chemicals, paints, adhesives, and so forth.

The HWSF will also take batteries, televisions, computer monitors and mercury switches from appliances. However, the HWSF will not take explosive materials, biowastes, or wastes that are infectious or radioactive.

At April's Household Hazardous Waste Roundup Day, the HWSF racked up a total of 2,283 pounds of hazardous waste.

Thirty two base residents came to the event and 425 items were processed, identified, classified and contained at the HWSF site.

“All of the waste was properly classified, packaged, labeled and stored that day for disposal and recycling through the Defense Reutilization and Marketing Office, or DRMO,” Young said.



ROUNDING IT UP — Above is a flatbed truck with computer monitors and televisions for recycling.

Left, Glenn Beshara, a Hazardous Waste Support Facility (HWSF) worker, helps a base resident unload the trunk of her car on Household Hazardous Waste Roundup Day, which took place on April 23 at the base exchange parking lot.

Bottom, from left to right, HWSF workers Beshara and Dave Parker sort Household Hazardous Waste by placing it in the proper bin.

The HWSF coordinates with the Defense Reutilizations and Marketing Office for proper disposal and recycling of these items.



The INCREDIBLE life of a recycled can

It happens every day, all across America and all across Edwards Air Force Base (AFB). And like many things that go on in the background of our lives and that happen with predictable regularity, recycling and the after-life of familiar things like an aluminum soda can might be a bit of a mystery and surprise to most of us.

Recycling step by step

1

IF I COULD RECYCLE MYSELF, I WOULD!

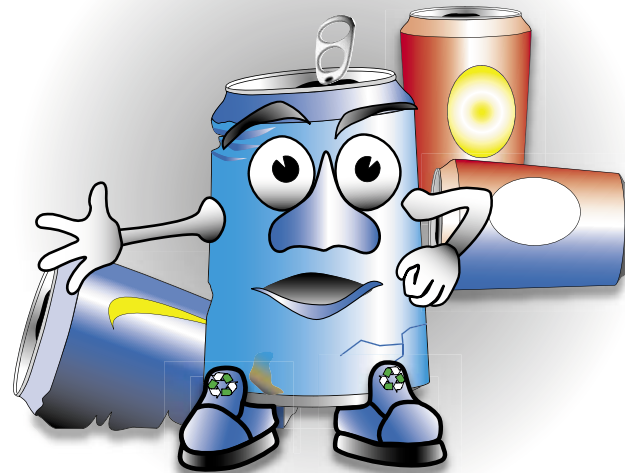


An aluminum can enters the recycling stream at Edwards AFB in one of three ways:

1. Customers bring them out themselves and turn them in for cash
2. They are left at paper and cardboard recycling points in some of the buildings on base
3. Or, they are collected in military family housing areas in their recycling containers each day

2

DOES THIS BEAT THE LANDFILL, OR WHAT?



The family housing containers are sorted from the rest of the recyclable material through manual and mechanical sorting. All of the cans are collected into hoppers until there is enough to produce a bale. They are then dumped onto a conveyor belt and into a horizontal baling machine. The cans are compressed into approximately 660 pound bales and tied with wire.

3

HONEST. EXTREME MAKEOVERS FOR EVERYONE!



They are sold to a buyer who transports them to an aluminum company. At the aluminum company, the condensed cans are shredded into flakes or chips, crushed and stripped of their logos and markings via a burning process. Then the chips are melted in furnaces where they are blended with new, virgin aluminum. Molten aluminum is poured into 25-foot long ingots that weigh over 30,000 pounds. The ingots are fed into rolling mills that reduce the thickness of the metal from 20-plus inches to a sheet that is about 1/100 of an inch thick.

This metal is then coiled and shipped to can makers, who produce can bodies and lids. They, in turn, deliver cans to beverage companies for filling.

4

A BRAND NEW DAY. A BRAND NEW START. THANKS RECYCLERS!



Who Knew?

- Discovered in the 1820s, aluminum is the most abundant metal on earth.
- Over 50 percent of the aluminum cans produced are recycled.
- A used aluminum can is recycled and back on the grocery shelf as a new can, in as little as 60 days.
- Aluminum is a durable and sustainable metal: $\frac{2}{3}$ of the aluminum ever produced is in use today.
- Every minute of every day, an average of 113,204 aluminum cans are recycled.
- Making new aluminum cans from used cans takes 95 percent less energy and 20 recycled cans can be made with the energy needed to produce one can using virgin ore.
- Recycling one aluminum can saves enough energy to keep a 100-watt bulb burning for almost four hours or run your television for three hours. Last year 54 billion cans were recycled saving energy equivalent to 15 million barrels of crude oil — America's entire gas consumption for one day.
- Tossing away an aluminum can wastes as much energy as pouring out half of that can's volume of gasoline.
- In 1972, 24,000 metric tons of aluminum used beverage containers (UBCs) were recycled. In 1998, the amount increased to over 879,000 metric tons. In 1972, it took about 22 empty aluminum cans to weigh one pound. Because of the technology we now have, recyclers are able to use less material and increase the durability of aluminum cans. Since 2002 it has taken about 34 empty aluminum cans to weigh a pound.
- The average employee consumes $2\frac{1}{2}$ beverages a day while at work.

Source: Web site at www.earth911.org

Barricade



Water laps at the edge of the roadway on Rosamond Boulevard in late May. With the warmer weather the water on the lakebeds has been evaporating.

The lakebeds at Edwards Air Force Base (AFB) had a fulfilling fall, winter and spring season as the rains left more than enough water. The shrimp thrived and the birds had a feast.

Along Rosamond Boulevard, near the West Gate, the water began to creep up onto the road. This caused many traffic delays due to the flooding. The Environmental Impact Analysis Process (EIAP) team hustled to turn around an environmental assessment before loads of sand, concrete barriers and lining were transported to block the water from creeping further onto Rosamond Boulevard.

Modeling (from page 1)

manager for the Geographic Information System (GIS). "The accuracy of the results ensures that government agencies can use the data to make a determination on the digital satellite pictures of a potential distribution of a species in the environment."

Predictive modeling uses physical data to identify areas containing similar physical properties. The process begins with a digital satellite picture. Light waves reflected from the earth's surface are analyzed and given a value for each wavelength (blue, green, red, infrared).

"Each soil type gives off a distinctive wavelength pattern," Watts said. "The predictive-modeling system calculates which areas have the same pattern. By instructing the system to target a specific pattern, we can locate areas in the satellite picture that have the same physical characteristics, such as soil type."

Using this process, Watts and his team were able to map the habitat of the desert cymopterus.

"Having studied known populations of desert cymopterus on base, we knew what type of soil these plants needed to exist," Watts said. "The system found similar soil areas to map out other possible locations of desert cymopterus."

Once the system located probable areas of desert cymopterus populations, a survey team conducted field studies to see if any plants existed in those areas. Different spot checks revealed the success of the predictive modeling. As new data becomes available, the model will improve to be more accurate.

"We found new populations that would have taken us a long time to locate on our own," Watts said. "Using predictive modeling, the survey teams went directly to a specified location instead of searching through 471 square miles of base property for desert cymopterus. This made our surveys more focused and prevented us from wasting time and money on the needle-in-a-haystack approach."

Saving government resources is only one of the benefits of predictive modeling. Through their recent findings, Watts and his team confirmed that desert cymopterus habitat occurs in areas outside of Edwards AFB.

"Our results demonstrated that the desert cymopterus grows in more areas than we originally believed, and they are not limited to survival on Edwards AFB," Watts said. "The modeling was an important factor in the U.S. Fish and Wildlife Service's decision not to list desert cymopterus as an endangered species."

With the help of predictive modeling, Edwards AFB plans to expand its knowledge of other sensitive species on base, such as the Mohave ground squirrel. Predictive modeling has already been used to find new plant locations of alkali mariposa lily and Barstow woolly sunflower, two more native species.

"We are responsible for monitoring and maintaining the natural status of many different plants and animals on the base," Watts said. "Predictive modeling can help us meet these requirements and draw a more accurate picture of the populations in our area."



Tree planting with 95th Air Base Wing's Commander

Eighteen kindergarteners helped plant a tree on base in celebration of Arbor Day. The students joined Col. Derek Jeter, 95 Air Base Wing commander, and representatives from Civil Engineering and Environmental Management (EM) in planting a tree in an open field between the EM office and the base chapel April 29.

"I am so happy you came to help plant this tree on Arbor Day," Col. Jeter said. "They help us in so many ways."

"We came to celebrate Arbor Day," Sherry Miller said, teacher for the participating kindergarten class. "Plant a tree, and read a book about a tree ... how the tree grows ... some people aren't sure of the process."

"Arbor Day also ties in with our lesson plan. We were learning about Earth Day, so this fit into it well."

The students from Miller's class memorized *If A Tree Could Talk* and read it from beginning to end for Col. Jeter after he gave a brief history of Arbor Day and helped plant a tree with them.

Arbor Day was founded by Julius Sterling Morton, a Nebraska journalist and politician. The first Arbor Day took place April 10, 1872 in Nebraska.

For more information on Arbor Day go to www.arbor-day.net or www.arborday.org.



Meeting Highlights

Restoration Advisory Board

The following report highlights the latest quarterly meeting of the RAB held May 19, 2005 at Lancaster, Calif.

/// **Site 280 Remediation** — Environmental Restoration Program (ERP) manager Tom Merendini, discussed the cleanup effort to take place at the Rosamond burn dump. Kern County is working with Environmental Management (EM) to address ash and debris located in a fenced-off area to the west of Edwards Air Force Base (AFB). Historically, the northern boundary of the county burn dump extended onto base property. In order to correct the extended burn dump area, Kern County plans to clean up the

contaminated soil located on Edwards AFB and move the chain-linked fence south to the county line. Lyn Beurmann, Kern County Waste Management Department, was available to answer questions.

/// **Budget for Fiscal Year 2005** — David Steckel, chief of the Restoration Branch, presented the budget for the 2006 fiscal year. With a slight increase over last year's funding, about \$17 million will be spent on cleanup operations at Edwards AFB. Money will be divided among several categories. With 14 planned projects, the most activity is expected to occur in monitoring, followed by Records of Decision and operation and maintenance within 13 and 12 projects, respectively.

New treatability studies are not expected to make the project list. Instead, the ERP plans to focus on long-term monitoring and cleanup solutions for the 10 operable units. Other categories funded for 2006 include management, cleanup and base-wide projects.

Acting Air Force co-chair and EM Division chief Robert Wood explained that the 2006 restoration budget reflects a mature and well-established restoration program. Hence, a lot of emphasis is being placed on the continuation of proven methods to finish site cleanup. All public representatives present agreed with the prioritization of the 2006 projects.

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Published data and documents relating to the Environmental Restoration Program are available for public review in information repositories at four locations. The current information repositories are located in the cities of Boron, Lancaster and Rosamond, as well as Edwards AFB. They are updated when new documents are released.

If you have any questions about information in the repositories, please contact Gary Hatch, Environmental Public Affairs at (661) 277-1454 or through e-mail at gary.hatch@edwards.af.mil.

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Edwards AFB, Calif.

(661) 275-2665

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 Fri. 9:30 a.m. - 6 p.m.
 Sat & Sun 10:30 a.m. - 6 p.m.

Kern County Public Library

Wanda Kirk Branch

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Rosamond, Calif.

(661) 256-3236

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 Thurs-Sat 10 a.m. - 6 p.m.

Los Angeles County Public Library

601 W. Lancaster Blvd.

Lancaster, Calif.

(661) 948-5029

Mon-Wed 10 a.m. - 8 p.m.
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 Sat 11 a.m. - 5 p.m.

Col. Vernon P. Saxon, Jr.**Aerospace Museum**

26962 Twenty Mule Team Road

Boron, Calif.

(760) 762-6600

Mon-Sun 10 a.m. - 4 p.m.



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